DETAILED ACTION

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Derek Benke on February 19, 2008.

The application has been amended as follows. Please amend the claims as set forth

below:

Claim 1 (CURRENTLY AMENDED) A ~~process~~ method for communication between

subscriber stations via a packet switching network, said process comprising:

evaluating deterministic behavior of the packet switching network, the behavior being

defined as deterministic if any packet sent on the network from a source subscriber station

reaches a destination subscriber station within a duration that is limited in time, said evaluating

comprising:

determining a latency value, the latency value being a residence time in an output buffer

of a switch,

determining a max latency value, the max latency value being a maximum residence time in an output buffer of a switch,

determining a BAG_i value, the BAG_i value being a minimum time between two consecutive frames belonging to a virtual link i, before they are transmitted,

determining a $(Jitter\ In)_i$ value, wherein the $(Jitter\ in)_i$ is jitter associated with a virtual link i that represents a time interval between a theoretical instant at which a frame is transmitted, and its effective transmission that may be before or after the theoretical instant,

determining a $(max\ frame\ duration)_i$ value, the $(max\ frame\ duration)_i$ value being a duration of a longest frame on the virtual link i, and

determining for each output port from each switch on the network if the following relation is satisfied:

$$\sum_{i\,=\,number\ of\ virtual\ links\atop passing\ through\ the\ buffer} \left[1 + int\left(\frac{(Jitter\ In)_i + maxLatency}{BAG_i} \right) \right] * (max\ frame\ duration)_i \leq latency,$$

wherein, if the relation is not satisfied, a user is notified that said packet switching network is not deterministic.

Claim 2 (CURRENTLY AMENDED) A ~~process~~ method according to claim 1, further comprising adding the virtual links one by one, and the determining of each output port is performed after each addition of a virtual link.

Claim 3 (CURRENTLY AMENDED) A ~~process~~ <u>method</u> according to claim 1, wherein the packet switching network is located on an aircraft.

Claim 4 (CURRENTLY AMENDED) A ~~process~~ <u>method</u> according to claim 3, wherein the packet switching network includes a first switch connected to a first graphic screen and a second graphic screen.

Claim 5 (CURRENTLY AMENDED) A ~~process~~ <u>method</u> according to claim 4, wherein the packet switching network includes a second switch connected to a flight parameters generator and an aircraft maintenance computer.

Claim 6 (CURRENTLY AMENDED) A ~~process~~ <u>method</u> according to claim 5, wherein the first graphic screen displays flight parameters and the second graphic screen displays flight and maintenance parameters.

Claim 13 (CURRENTLY AMENDED) A ~~process~~ <u>method</u> according to claim 1, wherein the jitter refers to max jitter.

Claim 14 (CURRENTLY AMENDED) A ~~process~~ <u>method</u> according to claim 1, further comprising the step of aggregating a number of the virtual links without causing any loss of segregation.

Claim 15 (CURRENTLY AMENDED) A ~~process~~ method for communication between subscriber stations via a frame switching network, said process comprising:

evaluating deterministic behavior of the packet switching network, the behavior being defined as deterministic if any packet sent on the network from a source subscriber station reaches a destination subscriber station within a duration that is limited in time, said evaluating including~~,~~:

determining a latency value, the latency value being a residence time in an output buffer of a switch,

determining a max latency value, the max latency value being a maximum residence time in an output buffer of a switch,

determining a BAG_i value, the BAG_i value being a minimum time between two consecutive frames belonging to a virtual link i, before they are transmitted,

determining a $(Jitter\ In)_i$ value, wherein the $(Jitter\ In)_i$ is jitter associated with a virtual link i that represents a time interval between a theoretical instant at which a frame is transmitted, and its effective transmission that may be before or after the theoretical instant,

determining a $(max\ frame\ duration)_i$ value, the $(max\ frame\ duration)_i$ value being a duration of a longest frame on the virtual link i, and

determining for each output port from each switch on the network if the following relation is satisfied:

$$\sum_{i\,=\,number\ of\ virtual\ links\ passing\ through\ the\ buffer} \left[1 + int\left(\frac{(Jitter\ In)_i\ i + maxLatency}{BAG_i}\right)\right] * (max\ frame\ duration)_i \leq latency,$$

; and notifying a user, if the relation is not satisfied that said packet switching network is not deterministic.

Claim 16 (CURRENTLY AMENDED) A ~~process~~ method according to claim 15, further comprising adding the virtual links one by one, and wherein the determining of each output port is performed after each addition of a virtual link.

Claim 17 (CURRENTLY AMENDED) A ~~process~~ method according to claim 15, wherein the packet switching network is located on an aircraft.

Claim 18 (CURRENTLY AMENDED) A ~~process~~ method according to claim 17, wherein the packet switching network includes a first switch connected to a first graphic screen and a second graphic screen.

Claim 19 (CURRENTLY AMENDED) A ~~process~~ method according to claim 18, wherein the packet switching network includes a second switch connected to a flight parameters generator and an aircraft maintenance computer.

Claim 20 (CURRENTLY AMENDED) A ~~process~~ method according to claim 19, wherein the first graphic screen displays flight parameters and the second graphic screen displays flight and maintenance parameters.

Allowable Subject Matter

Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance: The amended claims feature a method for communication between stations via a network. The method comprises evaluating deterministic behavior of the network, where the behavior is defined as deterministic if a packet from a source reaches a destination within a limited time duration. The evaluation comprises the determination of a maximum latency comprising a maximum residence time in an output buffer of the switch, and a value defined by a certain equation (which depends on a minimum time between two consecutive frames belonging to a vertical link, before the frames are transmitted on a physical support, jitter for the link, and max frame duration) for each output port of each switch. The value defined by the equation is then compared with the maximum latency. If for each switch, the value defined by the equation does not exceed the maximum latency, the method guarantees that the network has a deterministic behavior, such that any packet sent on the network from a source node reaches the destination node within a limited time duration. If the comparison is not satisfied, a user is notified that the network is not deterministic. Because the value is derived through the equation and compared with a maximum latency, it is believed that the claimed invention is novel. Examiner was unable to procure prior teachings of such claimed features and could not render said features obvious to one of ordinary skill in the art, without the use of impermissible hindsight constructions. Further, the claim amendments have rendered the claims statutory. It is therefore the examiner's belief that the claimed invention does indeed possess novelty.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee, and to avoid processing delays, should preferably accompany the issue fee. Such submissions should clearly be labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is 571/272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571/272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tanim Hossain
Patent Examiner
Art Unit 2145

/Jason D Cardone/
Supervisory Patent Examiner, Art Unit 2145